

Q' 3. The process as claimed in claim 1 wherein said surface is a human or animal tissue section and/or endothelioid cells and/or protein chips and/or a cultivated piece of human or animal tissue.

4. The process as claimed in one claim 1 wherein the cell-specific target structures are identified in a process comprising the following steps:

- (I) automatically depositing a reagent solution Y1 that includes at least one marker molecule on said cell-specific target structure;
- (II) allowing the reagent solution Y1 to react, and automatically detecting at least one marker pattern of the target structure labeled with the reagent solution Y1;
- (III) removing said reagent solution Y1 before or after detecting the marker pattern, and repeating steps (I) and (II) with further reagent solutions Yn (n = 2, 3, ..., N) each containing said at least one marker molecule and/or at least another marker molecule; and

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(IV) combining the marker patterns detected in step (II)
to give a complex molecular combination pattern of
the cell-specific target structure.

5. The process as claimed in claim 1 wherein the selected target
structures are biochemically characterized in procedural step e)
by means of a molecule or molecular complex separation process,
in particular a protein separation process.

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7. The process as claimed in claim 1 wherein the following
procedural step is performed after procedural step d):

d1) conducting inhibition experiments regarding one or
plural ingredients of the cell-specific target structures
selected in procedural step (d) for detecting a binding
hierarchy of the ingredients.

Please add the following new claims 10 - 12:

10. The process as claimed in claim 2 wherein:

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said surface is a human or animal tissue section and/or
endothelioid cells and/or protein chips and/or a cultivated
piece of human or animal tissue;

the cell-specific target structures are identified in a process comprising the following steps:

- (I) automatically depositing a reagent solution Y1 that includes at least one marker molecule on said cell-specific target structure;
- (II) allowing the reagent solution Y1 to react, and automatically detecting at least one marker pattern of the target structure labeled with the reagent solution Y1;
- (III) removing said reagent solution Y1 before or after detecting the marker pattern, and repeating steps (I) and (II) with further reagent solutions Yn (n = 2, 3, ..., N) each containing said at least one marker molecule and/or at least another marker molecule; and
- (IV) combining the marker patterns detected in step (II) to give a complex molecular combination pattern of the cell-specific target structure;

the selected target structures are biochemically characterized in procedural step (e) by means of a molecule or molecular complex separation process, in particular a protein separation process;

said protein separation process is a 2D gel electrophoresis; and

the following procedural step is performed after procedural
step (d):

conducting inhibition experiments regarding one or plural ingredients of the cell-specific target structures selected in procedural step (d) for detecting a binding hierarchy of the ingredients.

11. The process as claimed in claim 10 wherein said ingredients are single or plural proteins of a cell-specific protein combination pattern.

12. A process for identifying and enriching cell-specific target structures, in particular for the identification of cell-specific protein combination patterns on the surface of cells and for enriching such cells, wherein said process comprises the following steps:

- (a) depositing a heterogeneous cell mixture on one or plural surfaces with predefined structures, causing cells with corresponding target structures to become bound to such surface(s);
- (b) removing any non-binding cells of said cell mixture from said surface(s);

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- (c) identifying the cell-specific target structures responsible for the binding of the cells to said surface(s);
 - (d) selecting and enriching cells with identical cell-specific target structures on said surface(s);
 - (e) automatically depositing a reagent solution Y1 that includes at least one marker molecule on said selected and enriched cell-specific target structure;
 - (f) allowing the reagent solution Y1 to react, and automatically detecting at least one marker pattern of the target structure labeled with the reagent solution Y1;
 - (g) removing said reagent solution Y1 before or after detecting the marker pattern, and repeating steps (f) and (g) with further reagent solutions Yn (n = 2, 3, ..., N) each containing said at least one marker molecule and/or at least another marker molecule; and
 - (h) combining the marker patterns detected in step (g) to give a complex molecular combination pattern of the selected and enriched cell-specific target structure.